

## Primrose, Annette

**From:** Dayton, Christine  
**Sent:** Thursday, June 03, 1999 4:21 PM  
**To:** Brooks, Laura; Primrose, Annette; Castaneda, Norma; Butler, Lane; Greengard, Tom  
**Subject:** FW: Solar Pond PLume % Nitrate TMDL for North Walnut Creek

-----Original Message-----

**From:** JEB LOVE [SMTP:jwlove%smtpgate.dphe.state.co.us@inet.rfets.gov]  
**Sent:** Thursday, June 03, 1999 4:47 PM  
**To:** cspreng%smtpgate.dphe.state.co.us@inet.rfets.gov; etpottor%smtpgate.dphe.state.co.us@inet.rfets.gov; rohorstm%smtpgate.dphe.state.co.us@inet.rfets.gov  
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**Subject:** Solar Pond PLume % Nitrate TMDL for North Walnut Creek

Carl

I went back to the information we had back in March and Rich's calculations. Rich calculated an allowable daily load of 2.35 pounds of Nitrate per day to North Walnut Creek to meet the 10.0 mg/l under base flow conditions.

Based on the information available then the flux loadings in grams/foot/day were simulated for several scenarios. I recreated the simple assumptions we made then and looked at the results for two of the scenarios: Removal of ITS and Exiting ITS. I calculated the loads for a stream reach of 1000 feet and assumed 90% removal by the PRP. Attached are the spreadsheets.

The Removal of the ITS simulation with the assumptions we used showed a problem until 2005 and no problem after that.

Now separately, if we look at the preliminary treatability results, they range from < 1.0 mg/l to over 20 mg/l. The influent concentrations may not reflect actual conditions, but based on Rich's earlier calculations at a flow of 0.008 MGD and 2.35 pounds per day concentrations from the treatment unit need to be below 35 mg/l at flows up to 8,000 gallons per day. This assumes load to the stream from the existing alluvial load and bypass load around the treatment unit is zero. Though these loads may not be zero they may be negligible depending on final figures from the treatability studies and a final assessment of the wasteload allocation. Therefore, for now the total stream flow and load from the treatment unit is allocated the entire wasteload allocation for subsurface loading of nitrate to North Walnut Creek.

Now, Rich has more data and the assumption should be revisited so everyone is on the same page to produce the detailed control strategy. Total allowable stream load (TMDL), Load reduction needed (WLA), load reduction anticipated, detailed decision rules and boundary conditions created both for the stream POE and the treatment facility (performance requirements and attendant monitoring incorporated into IMP).

If we look at expected concentrations and flux anticipated from the treatment unit in conjunction with the other previously mentioned boundary conditions (rather than the model results and a percentage removal efficiency) more closely, the expected load released under base flow and event flows may well be much less than the allowable wasteload for North Walnut Creek.

Jeb





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